species has been recorded from Guatemala and Belize (Land 1970, Russell 1964), but seems to be very local in occurrence, as in Mexico (Howell & Webb 1995).

FUERTES' ORIOLE *Icterus (spurius) fuertesi*

One adult in male plumage was observed on 25 February 1993, 2.3 km S of Nuevo Veracruz among a flock of Orchard Orioles *Icterus (spurius) spurius*. It was not possible to determine if females or immatures of this species were also present. The specific status of the two forms is still in debate, but winter sympatry has been documented elsewhere (e.g. AOU 1983). This record is the first for Quintana Roo.

EASTERN MEADOWLARK *Sturnella magna*

One individual was sighted on 4 June 1993, in a patch of grass at the margins of Rio Hondo. No previous records exists from Quintana Roo, and its seasonal status is uncertain; the data suggests a resident population (Russell 1964). This species is uncommon in Belize (Russell 1964) and northern Guatemala (Land 1970). In the Yucatan Peninsula it has been recorded only along the northern coast of the state of Yucatan.

Discussion

Due to the lack of thorough surveys in many regions, knowledge of the Mexican avifauna is still fragmentary. Although organized surveys have been developed for several states and regions (e.g. Binford 1989, Navarro *et al.* 1993), many areas remain little known. The avifauna of southern Quintana Roo is very rich, and an analysis of general distribution patterns of bird species will be published elsewhere (Figueroa in prep.). Undoubtedly, most of the species still to be recorded have been overlooked due to lack of thorough field work, but some crop-associated species may well be recently established, as a result of the extensive transformation of forest to agriculture and pasture lands. Examples may include the seedfinch and meadowlark recorded here.

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Distributional records of and identification notes on birds of the Beni Biological Station, Beni, Bolivia

by Robin C. Brace & Jon Hornbuckle

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Distributional data on the Bolivian avifauna have accumulated rapidly in recent years, which has facilitated greatly the identification of localities crucial for conserving species at risk from extinction. Wege & Long (1995) identified 27 'Key Areas', of which nine were ranked as being of top priority with regard to the numbers of threatened species occurring. One of these locations is the Beni Biological Station (BBS) (Estación Biológica del Beni) (IUCN category I; IUCN 1992), which was the first ever UNESCO 'Man and Biosphere' site. This 160 000 ha tropical lowland reserve is characterized by a complex habitat mosaic, spanning rainforest, savanna and wetland; consequently it has a rich avifauna. A recent inventory has been provided by Brace *et al.* (1997), who list 478 species, and treat in detail the status of the four threatened and 15 near-threatened species (Collar *et al.* 1994) which had been recorded as of 1995. However, information on either range extensions or new observations relating to the identification of non-threatened species was not provided in that paper, an omission which is rectified here.

The great majority of the data presented are derived from observations made during three annual (1994–96), 6-week visits to the BBS over the July–September period (dry season), accompanied by EarthCorps (Earthwatch) teams and Bolivian students, to undertake ecological research on the faunas of savanna-based forest islands (R. C. Brace *et al.*, unpubl. data). However, commentaries on three of the 22 species discussed are based solely on sightings made by White *et al.* (1993) in 1992. Earlier endeavours at the BBS by Cabot *et al.* (1986), Flores (1988), S. L. Hilty (unpubl. data), Rocha (1988, 1990) and other workers led to the production of a preliminary species catalogue by Miranda *et al.* (1991), which tabulated more than 400 species. Although that inventory acted as a valuable template for our expanded listing (Brace *et al., loc cit.*), it was necessary nevertheless to evaluate critically a number of records, which resulted in the exclusion of no less than 10 species.

Although we now have a good working knowledge of the avifauna of some parts of the BBS—notably those within easy reach of the El Porvenir field station located on the southern flank of the reserve—there is a paucity of information concerning centrally located tracts which are difficult to access. It is our hope that this paper will catalyse investigations of hitherto relatively unexplored areas of the BBS, and will encourage further study during the austral summer (wet season), a period over which there is little information, for example, on the influx of northern migrants.

Figure 1. Location of the Beni Biological Station (BBS). The administrative departments of Bolivia, and some cities and towns, are indicated, as are adjacent countries.

Study location and areas

The BBS is located in the Llanos de Mojos (Fig. 1), a lowland (*c.* 200 m altitude) plain characterized by savannas and forested areas. The savannas are either hyperseasonal (subject to alternating soil saturation and drought/fires) or seasonal (subject to an extended dry period) (Sarmiento 1983). The reserve itself extends over an area roughly 80 by 30 km in extent, 70% of which is covered by a variety of forest types, though humid seasonal categories dominate (Miranda *et al.* 1991). The northern and southern limits of the reserve are demarcated, respectively, by the Ríos Manique and Curiraba (Fig. 2a); inundation of the former, a 'white-water' river, is responsible for the presence of much swamp forest within the reserve core. The El Porvenir (PVR) field station (14°52′S, 66°20′W), where we were based, is located 180 km west of Trinidad and 50 km east of San Borja. Planned expansion (Miranda pers. comm.) of the BBS will engulf the 2500 ha PVR estancia (Fig. 2b), which extends northwards to the Río Curiraba.

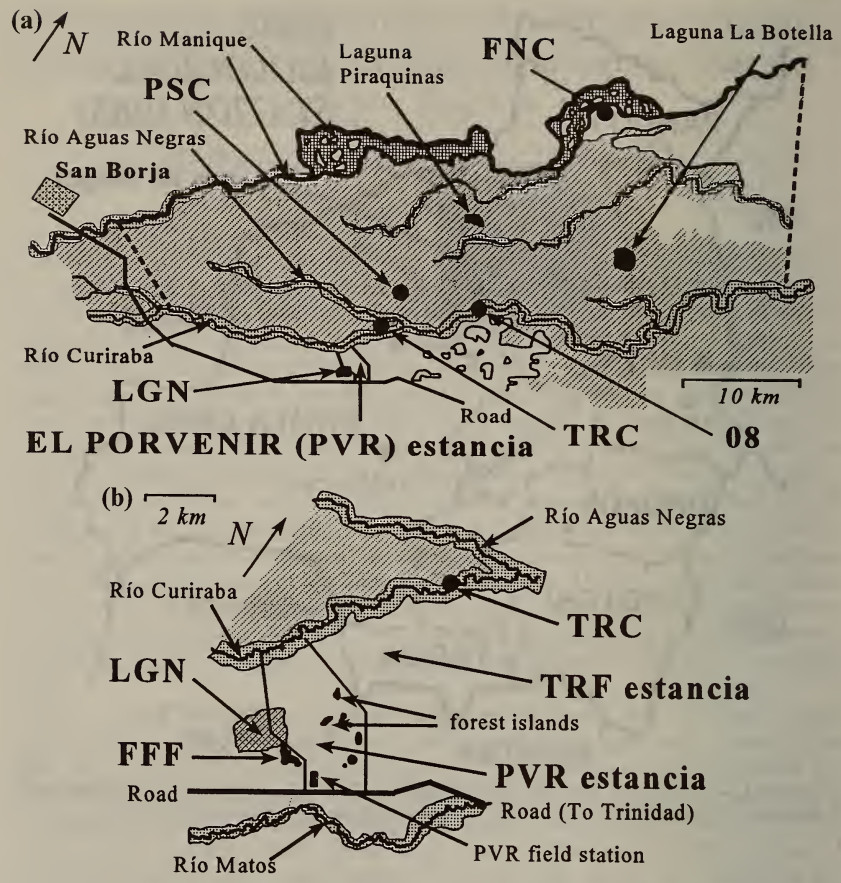

Figure 2. (a) Map of the Beni Biological Station to show study locations and areas (see text): based on maps given in Miranda *et al.* (1991). To the southwest and northeast, the limits of the reserve (as of 1996) are indicated by dashed lines. The northern and southern limits are demarcated by the Ríos Manique and Curiraba (with accompanying riverine forest shown) respectively. South of the latter lies the El Porvenir (PVR) estancia. Stippled areas represent forest; unmarked tracts, in the east and adjacent to the San Borja–Trinidad road, designate savanna. To the east of PRV a representative selection of savanna-based forest islands/fragments is depicted. (b) Map showing the El Porvenir estancia and affiliated field station, in more detail; some forest islands are depicted. Also denoted are the TRF estancia, the FFF, and some features south of the road.

Consequently, this ornithologically well-worked estancia is, and has been considered (Brace *et al.* 1997), an integral part of the reserve. The same is true of the Triunfo (TRF) estancia, through which it is necessary to pass in order to reach forest camps from PVR. It should be noted that the reserve forest block is virtually isolated now from all adjacent forested areas by intervening savanna, giving concern in the

context of putative future avifaunal impoverishment. However, negating this isolation to some degree is the presence of well-vegetated, former river beds (*curiches*) meandering across the PVR savanna, and of forest islands (*islas des bosques*), which appear to act, collectively, as habitat corridors (Saunders & Hobbs 1991). They are utilized by a wide selection of forest birds, though by no means all such species (R. C. Brace & J. H. Pearce-Higgins unpubl. data).

The following areas are distinguished in the text; their locations are indicated in Figure 2.

PVR estancia—savanna. This fairly open terrain is dominated by *Andropogon bicornis* (Graminaceae) (up to *c.* 80 cm in height), and contains scattered fire-resistant trees: e.g. *Tabebuia aurea*, *T. chrysantha*) (tajibos) (Bignoniaceae), *Pseudobombax* spp. (Bombacaceae). It is subjected to limited seasonal inundation, cattle grazing, and to annual incursions of fire started in neighbouring estancias during the August/September period to promote the growth of new grass. The fires frequently affect quite extensive areas; some controlled, 'in-house' burns are initiated also. Consequently, the savanna exhibits at any one time a patchwork of grass of different heights.

PVR estancia—forest islands. Dotted in the PVR savanna are numerous such islands ranging in size from <1 to 5+ ha. *Guazuma ulmifolia* (coco) (Sterculiaceae), *Ficus* spp. *Curatella americana* (Moraceae) and *Scheelea princeps* (motacú) (Palmaceae) are typical island trees; fire-resistant species predominate on the periphery. The centres of most islands are relatively devoid of undergrowth due to cattle grazing, but narrow foliated scrubby borders persist which attract a wide variety of birds.

Florida estancia—forest fragment (FFF). An 11 ha fragment created some 20 years ago as a result of road construction. Although grazed, the western portion retains fairly dense undergrowth and the periphery is profusely vegetated.

Laguna Normandia (LGN)—cyperacean edge. A fringe (up to 20 m wide) of *Cyperus giganteus* (Cyperaceae) (to 2 m in height) punctuated in places by other sedges, grasses and some bushes.

Triunfo (TRF) estancia. An area of savanna which is somewhat less open than that of the PVR estancia, with some patches of *chaco*-like scrub.

El Trapiche (TRC). A camp sited in low (<15 m), seasonally inundated palm forest, 700 m distant from the savanna edge and 250 m north of the Río Curiraba. Mist-netting locations were up to 1 km north of the camp, and within a narrow belt of riverine forest on the southern flank of the Curiraba, where there are many tangled bushes.

Pascana (PSC). A camp set in swamp forest alongside a small 'black-water' lagoon; situated 6 km north of Trapiche.

08 (Zero Ocho). A Chimane Indian village sited adjacent to the Río Curiraba. Mist-nets were set up in seasonally inundated forest *c.* 0.5–1 km northwest of the village, accessed by a track leading to PSC.

Final Camp (FNC). A location in the northeast of the reserve alongside the Río Manique. The camp was located in high (to 30 m)

riverine and swamp forest, which is quite open in places (White *et al.* 1993).

Systematic ordering in the species accounts is conservative and follows Clements (1991). For the tyrant flycatchers, the taxonomy and English names used adhere closely to Ridgely & Tudor (1994). Species new for the BBS (1992–96) are indicated by an asterisk; species additional to those listed by Brace *et al.* (1997) are denoted by two asterisks (four species—taking the reserve total to 482). In those instances where only one of the authors observed a species, the appropriate initials appear; # signifies that neither author was involved in the sighting concerned (two species in 1992). JWP-H refers to James Pearce-Higgins who accompanied us in 1995, and BMNH to the Natural History Museum, Tring.

Species accounts

PEARL KITE *Gampsonyx swainsonii**

One watched in savanna 3 km north of PVR on 17 September 1992 (RCB *et al.*) (White *et al.* 1993) is the first record for Beni; it remains the sole sighting for the BBS. This species was known previously from the non-Amazonian lowlands of Santa Cruz and Tarija, and from La Paz (Parker 1989).

TINY HAWK *Accipiter superciliosus***

An individual seen near TRC on 29 July 1996 (George and Joan Hardie, RCB) is the first and only record for the BBS, although both a pair (28 August 1994) and a single bird (JH) (August 1995) have been observed in secondary forest with clearings, only 4 km to the south of the PVR estancia. These sightings would appear to be the second to fourth reports for Beni, the first coming from foothill forest (*c.* 600 m) 40 km west of San Borja in 1990 (Parker 1989, Parker *et al.* 1991). Within Bolivia, the species is known only from Beni, Cochabamba and Santa Cruz (Remsen & Traylor 1983, Arribas *et al.* 1995).

BURROWING OWL *Speotyto cunicularia**

A pair in residence at El Porvenir in 1995 and 1996 constitute, surprisingly, the first reports from the department of Beni.

LITTLE NIGHTJAR *Caprimulgus parvulus**

Although widespread in lowland Bolivia (Arribas *et al.* 1995), this species had not been recorded at the BBS until August 1994, when it was heard in the savanna adjacent to the PVR headquarters. Found subsequently to be prevalent in the area, with many heard, several seen and one trapped in both 1995 and 1996; a nest containing a single egg was discovered in a forest island in August 1995.

STRIOLATED PUFFBIRD *Nystalus striolatus*#*

An individual noted at PSC on 15 August 1992 (White *et al.* 1993) is apparently the second record for Beni, the first coming from humid Andean foothill forest (Serranía Pilón) (Parker 1989).

PALE-BREASTED SPINETAIL *Synallaxis albescens*

This spinetail which has been found in low tangled scrub in both seasonally inundated and dry savanna (PVR and TRF estancias), particularly at the edges of forest islands and of the FFF, shows considerable, apparently undocumented plumage variation, which is assumed to be age-related. According to Ridgely & Tudor (1994), the tail should exhibit a dull brownish hue, but that of most birds examined (total of 51 trapped) displayed a rufous tinge, which can be marked and thus suggestive of Sooty-fronted Spinetail *Synallaxis frontalis*. Although some birds showed a pure rufous crown as expected, in the majority it was brown with some rufous speckling, and in a small number the crown was plain brown, variation which was apparent in skins scrutinized (BMNH). Note that the Plain-crowned Spinetail *S. gujanensis*, which has been trapped (three in 1995) in forest both at TRC and south of PVR, has more extensive rufous on the wings (remiges in addition to coverts), as is the case in *S. frontalis* and to some degree too in *S. hypospodia*, considered below. One individual controlled on 6 August 1994 was re-trapped in the same location (PVR forest island) on 23 August 1996.

CINEREOUS-BREASTED SPINETAIL *Synallaxis hypospodia**

In comparison to *S. albescens* this species was less numerous, though observed routinely (up to *c.* five per day) in the peripheries of forest islands, at the edge of the FFF and in TRF scrub, requiring seemingly slightly taller (3+ m) vegetation. The rufous wing coverts were always duller in tone, and the black of the throat more extensive. It was found to be significantly heavier too: 14.9–18.1 (16.9) g, s.d. 1.04, $n=17$ as compared to 9.2–14.3 (11.2) g, s.d. 0.89, $n=50$ ($Z=-6.130$, $P<0.001$). The two species are easily separated on song (see Ridgely & Tudor 1994). One *S. hypospodia* caught (PRV scrub) on 6 August 1995 was re-trapped at the same site on 23 August 1996. (Re-trap weights have been excluded from the comparison presented above.)

SPECKLED SPINETAIL *Cranioleuca gutturata**

An individual trapped at PSC on 12 August 1992 (White *et al.* 1993) was the first record for the BBS of this species, which has been found at a small number of other Benian localities (see Gyldenstolpe 1945, Davis *et al.* 1994). Additionally, several were seen and one mist-netted (17 August) at TRC in 1994.

PLAIN ANTVIREO *Dysithamnus mentalis*

A specimen procured at the BBS in 1988 by Omar Rocha (see Davis *et al.* 1994) was the first from lowland Bolivia. However, it had been reported from Beni previously by Parker (1989), who found it to be fairly common above 800 m (Serranía Pilón) and who heard the species also at low elevation, 20 km southeast of San Borja. We have observed it to be not uncommon at the BBS, with individuals often paired. A total of seven have been trapped: three in the FFF, three at 08 and one at TRC.

STRIPE-CHESTED ANTWREN *Myrmotherula longicauda***#

One caught at FNC on 16 September 1992 (White *et al.* 1993) is the only record for Beni of this essentially foothill species (*c.* 500–1100 m) (Remsen & Traylor 1989, Ridgely & Tudor 1994). Prior to this sighting, the putative occurrence of Streaked Antwren *M. surinamensis* was deemed far more likely since this congener, which is very similar in appearance, occupies habitats more akin to those prevalent at the BBS than those frequented usually by *M. longicauda*, although admittedly *M. surinamensis* has only a limited and discontinuous distribution in northern and eastern Bolivia.

SULPHUR-BELLIED TYRANT-MANAKIN *Neopelma sulphureiventer*

This relatively little known species occurs locally in southwest Amazonia (Brazil, Peru and Bolivia) (Gyldenstolpe 1945, Ridgely & Tudor 1994). Twelve individuals were secured at TRC (two being re-trapped in 1995), two were handled in the FFF and two mist-netted at 08. White *et al.* (1993) trapped one bird at PSC and three at FNC. From experience of the species on the Ríos Beni and Quizer in Beni and Santa Cruz, respectively, Remsen *et al.* (1988) describe it as being an inconspicuous resident of undergrowth of riverine forest, and commented that it is unclear whether or not the species is a bamboo specialist. Our work indicates that it is more catholic in its habitat preferences than the first of these two comments would suggest, and in the absence of any bamboo at the four ringing sites with which we are familiar, indicates that bamboo is not necessarily a habitat prerequisite.

OCHRE-BELLIED FLYCATCHER *Mionectes oleagineus***

A total of eight *Mionectes* were mist-netted in seasonally inundated forest at TRC in 1995, over the 2–4 and 15–17 August periods, five being caught on one day. On the basis of the presence or absence of buffy/tawny tertial edgings (Ridgely & Tudor 1994, J. V. Remsen pers. comm.), four birds were identified firmly as *M. oleagineus*, and one—having no tertial edgings—as the sibling, McConnell's Flycatcher *M. macconnelli* which had been recorded from the BBS (riverine forest) previously (Rocha 1988). Appraisal of the other three individuals remains inclusive, despite retrospective comparison with skins of the two species held by the BMNH. No *Mionetes* spp. were seen in either 1994 or 1996, and none was observed either by White *et al.* (1993), who remained at Trapiche for over one week in 1992. *M. oleagineus* is widespread in lowland Bolivia (Arribas *et al.* 1995), and although it has been reported as favouring second growth and edge habitat and *M. macconnelli* described as inhabiting undisturbed forest (Willis *et al.* 1978), the two species have been found also to occur together, in hilly upland forest and river-edge second growth (600 m altitude) near Puerto Linares in La Paz department (Capparella & Lanyon 1985).

SUIRIRI FLYCATCHER *Suiriri suiriri**

Three individuals of the northern form, *S. s. affinis*, treated separately sometimes as the Campo Suiriri (see Ridgely & Tudor 1994 for discussion), have been recorded. One was seen in the periphery of a

forest island in the TRF estancia on 30 August 1995 (RCB, JWP-H), and two were observed pursuing each other subsequently in fairly open savanna (PVR estancia) on 12 August 1996. Within Bolivia this subspecies is found in Beni and Santa Cruz (Remsen & Traylor 1983, Parker & Rocha 1991, Davis 1993).

WHITE-CRESTED TYRANNULET *Serophaga subcristata*

Over the 1994–96 period 12 trapped birds were identified as this species which is widespread, but identification of those (n=8) examined in 1994 is regarded now as being unreliable since it became apparent retrospectively in 1995 that the White-bellied Tyrannulet *S. munda* (see below)—a confusingly similar species—is found on the reserve also. *Serpophaga* spp. were seen on almost a daily basis on the PVR estancia in 1995 and 1996; the majority were assigned tentatively to *S. subcristata*. Two individuals were re-trapped, one in 1995 (TRF estancia scrub) and one in 1996 (FFF), both in the same location as ringed. A specimen collected from forest island terrain 40 km east of San Borja on 30 August 1985 (Cabot 1990) was the first record of the species from Beni; Parker (1989) reported seeing three or four birds 20–27 km east of San Borja (June) in thorny woodland and bushes.

WHITE-BELLIED TYRANNULET *Serpophaga munda**

Of the total of nine *Serpophaga* secured (19–21 August 1995) in undergrowth at the edges of various forest islands or of the FFF, or in TRF scrub in 1995, five displayed a greyer, less olivaceous mantle and a paler belly (lacking or almost lacking any yellowish suffusion) than did the remainder, and were identified therefore as *S. munda*. That some *S. munda* can show traces of a yellow (possibly age-related) wash below necessitates that species separation must proceed cautiously (see Plain Tyrannulet *Inezia ornata* below), though is aided greatly if their characteristic calls are heard (Parker 1989, Ridgely & Tudor 1994, pers. obs.). Apparently not recorded from Beni previously (Arribas *et al.* 1995), though Parker (*loc. cit.*) indicated that he may have seen one 27 km east of San Borja. The species occurs widely in Bolivia, but has yet to be recorded from Pando. Quite possibly *S. munda* visits the BBS solely during the austral winter, descending from Andean foothill and valley breeding areas (Ridgely & Tudor 1994). The putative migratory status of this species at the BBS, and of *S. subcristata* also, requires investigation.

PLAIN TYRANNULET *Inezia inornata*

This was easily the commonest tyrannulet encountered in the peripheries of forest islands, with a total of 25 being mist-netted on the PVR and TRF estancias. It was seen occasionally too in forest at TRC (with two birds trapped), where *Serpophaga* spp. were not encountered. The species is superficially very similar in appearance and behaviour to the two *Serpophaga* spp. dealt with above, and similarly great care is needed with field identification (see Ridgely & Tudor 1994). One individual ringed in 1995 was handled again in the same forest island in 1996.

WHITE-THROATED SPADEBILL *Platyrinchus mystaceus*

Examination of birds trapped at TRC, in the FFF and in secondary forest 3 km south of the reserve (total of 20 individuals) showed that in common with three specimens secured by Rocha at the BBS previously (see Parker *et al.* 1991), they were somewhat ochraceous below, displaying intermediacy in coloration between that of lowland *P. m. bifasciatus* and of the Andean foothill form, *P. m. partridgei*. Such intermediate plumage substantiates the current subspecific status given to these forms whose ranges, together with that of *P. m. zamorae* from Peru and Ecuador, provide collectively an example of a circum-Amazonian distribution found in several bird groups (Remsen *et al.* 1991). An individual collected just south of Trinidad (Schmitt & Schmitt 1987) was bright yellow below, matching closely *P. m. bifasciatus*. Two birds were re-trapped in 1995; one of these was handled for a third time in 1996, indicating residency within the FFF.

CRESTED DORADITO *Pseudocolopteryx sclateri***

With the only other reports for this species in Bolivia relating to five males and two females acquired in December 1937 (Gyldenstolpe 1945), detection of the species on the PVR estancia in August 1996 was totally unexpected, though the site of those initial sightings, El Consuelo (Beni) to the east of Reyes, is only *c.* 100 km to the northwest of the BBS. It is pertinent to point out that the northern part of the distributional range of *P. sclateri* is characterized entirely by a scattering of highly restricted localities (Ridgely & Tudor 1994). Twenty four individuals were trapped in the LGN cyperacean fringe, where the species was detected first by Joan and George Hardie on 31 July (a party of four or five birds); singles were seen in two areas of savanna adjacent to *curiches*. Of those birds examined, nine were adult males, six were immature, and the remaining nine thought to be adult females. Six individuals were re-trapped (one twice), with four of the trap intervals being 14–17 days in length, thus demonstrating residency. Although confiding at times, the species was inconspicuous and it is possible therefore that it may have been overlooked previously.

XENOPSARIS *Xenopsaris albinucha**

One obtained in TRF scrub on 22 August 1994 (JH) is the only record for the reserve. An additional sighting relates to an individual observed on 30 July 1995 at the edge of secondary forest 3 km south of the BBS (RCB, JWP-H); seen also at Trinidad (one on 22–23 July 1996). The species appears to be scarce in Bolivia as elsewhere, though it has been found at a number of localities in Beni and Santa Cruz (Parker & Rowlett 1984) and has occurred also in Chuquisaca (Arribas *et al.* 1995).

ASHY-HEADED GREENLET *Hylophilus pectoralis**

One trapped at TRC on 17 August 1995 is the first record for Beni, although calls heard prior to this in winter 1995 near Riberalta (adjacent to the Brazilian border) by Sjoerd Mayer (pers. comm.), were probably of this species. It has a widespread Amazonian distribution

(Sick 1993), and has been recorded in Pando (Gyldenstolpe 1945) and Santa Cruz (Noel Kempff Mercado National Park) (T. A. Parker & J. M. Bates unpubl. data).

LONG-TAILED REED-FINCH *Donacospiza albifrons**

Within Bolivia, this species has been recorded only in Beni (Arribas *et al.* 1995). It was detected first in 1984, in open grassland in the vicinity of San Borja by Schmitt & Schmitt (1987), who obtained, additionally, two specimens 39 km west of Trinidad. It has been found 26–30 km east of San Borja by Parker (1989), who observed family parties. New for the reserve in 1994, when a party of five was found in the PVR savanna (1 August); two were trapped subsequently in tall grass in the TRF estancia. Observations made in 1995 and 1996 have revealed that it occurs regularly in the area, with a further five sightings in both years (maximum of two birds seen). Moreover, five individuals were mist-netted (four in 1996). It is anticipated that in due course the species will be found in the department of Santa Cruz, since otherwise this western outpost implies a distributional jump of almost 1000 km from known localities in Brazil and Paraguay, spanning much seemingly suitable terrain, an unlikely circumstance.

TAWNY-BELLIED SEEDEATER *Sporophila hypoxantha**

Known in Bolivia from Beni, Santa Cruz and La Paz (Arribas *et al.* 1995), it was not recorded until 1995 when several males in breeding plumage were identified first by JWP-H (PVR estancia); two males were trapped subsequently in 1996. These trapped birds were with a flock of *Sporophila* spp., comprising many male Rusty-collared and Dark-throated Seedeaters *S. collaris* and *S. ruficollis*, and a small number of Double-collared and male Grey-and-Chestnut (Rufous-rumped) Seedeaters *S. caerulescens* and *S. hypochroma*, together with many unidentifiable birds. No doubt the species had been overlooked previously in such flocks, which are encountered not infrequently in the savanna during the July–September period.

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